

MAEDA et al., SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Ext. Interview

501.33745CX4 / 219400807US5
Page 2

IN THE CLAIMS:

1.-42. (Canceled)

43. (Currently Amended) A method of inspecting a patterned wafer~~specimen~~, comprising:

emitting light containing a plurality of wavelengths from a light source; illuminating the specimen with the light-patterned wafer with the light focused substantially on a pupil of an objective lens to illuminate the patterned wafer through a lens;

detecting through the lens with a sensor, an image of a pattern on the patterned wafer~~specimen~~ as illuminated by the light, and outputting from the sensor, a signal concerning a detected image; and

processing the signal outputted from the sensor and obtaining information of defects of the pattern;

wherein light components having a predetermined wavelength range are selected from the light emitted from the light source for substantially preventing interference of lights reflected from the wafer~~specimen~~ by the illuminating, and are used to illuminate the patterned wafer~~specimen~~.

44. (Previously Presented) A method according to the Claim 43, wherein in the detecting, the image of the pattern is detected by a time delay integration sensor.

MAEDA et al., SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 3

45. (Currently Amended) A method according to the Claim 43, wherein in the illuminating, the patterned-waferspecimen is illuminated with ultra violet light selected from the light emitted from the light source.

46. (Previously Presented) A method according to the Claim 43, wherein in the illuminating, a wavelength selection filter selects the light components having a predetermined wavelength range of 600 nm or under from the light emitted from the light source.

47. (Currently Amended) A method of inspecting a patterned-waferspecimen, comprising:

illuminating at the specimen through an objective lens with light, focused substantially on a pupil of the objective lens, and with the light having a predetermined wavelength range as selected from light having a plural wavelengths emitted from a light source for substantially preventing interference of lights reflected from the waferspecimen by the illuminating;

detecting with a time delay integration sensor, a light reflected from the patterned-waferspecimen by the wavelength light and passed through the objective lens; and

processing the output signal from the time delay integration sensor and obtaining information relating to a defect of the patterned-waferspecimen.

MAEDA et al., SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 4

48. (Currently Amended) A method according to the Claim 47, wherein in the illuminating, the patterned-waferspecimen is illuminated with ultra violet light selected from the light emitted from the light source.

49. (Previously Presented) A method according to the Claim 48, wherein the time delay integration sensor outputs signals in parallel, and the signals outputted in parallel are processed in parallel in the processing operation.

50. (Currently Amended) A method according to the Claim 47, wherein in the processing, the output signal from the time delay integration sensor is processed using a variable defect detection sensitivity which varies according to a position on the patterned-waferspecimen.

51. (Previously Presented) A method according to the Claim 47, wherein in the processing, the output signal from the time delay integration sensor is processed using a variable defect detection sensitivity which varies according to the pattern being inspected.

52. (Currently Amended) An apparatus for inspecting a patterned
waferspecimen, comprising:

a light source to emit light containing a plurality of wavelengths;
an illuminating unit to illuminate the patterned-waferspecimen with light emitted from the light source; ~~where the light is focused substantially on a pupil of an objective lens to illuminate the patterned wafer;~~

MAEDA *et al.*, SN 10/686,584
Amtd. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 5

a detecting unit to detect an image of a pattern on the patterned waferspecimen as illuminated by the illuminating unit, and to output a signal concerning a detected image; and

a processing unit to process the signal outputted from the detecting unit and to obtain information of defects of the pattern;

wherein, the illuminating unit selects predetermined light components having a predetermined wavelength range from the light emitted from the light source for substantially preventing interference of lights reflected from the waferspecimen by the illuminating, to illuminate the patterned waferspecimen.

53. (Previously Presented) An apparatus according to the Claim 52, wherein the detecting unit detects the image of the pattern with a time delay integration sensor.

54. (Previously Presented) An apparatus according to the Claim 52, wherein the light source emits ultra violet light, and the illuminating unit selects the ultra violet light from the light emitted from the light source as the predetermined light components having a predetermined wavelength range.

55. (Previously Presented) An apparatus according to the Claim 52, wherein the light source is a lamp.

56. (Currently Amended) An apparatus according to the Claim 52, wherein the processing unit processes the signal outputted from the detecting unit with a

MAEDA *et al.*, SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 6

variable defect detection sensitivity which varies according to a position on the patterned-waferspecimen.

57. (Previously Presented) An apparatus according to the Claim 52, wherein the processing unit processes the signal outputted from the detecting unit with a variable defect detection sensitivity which varies according to the pattern being inspected.

58. (Currently Amended) An apparatus for inspecting a patterned waferspecimen, comprising:

a light source to emit light containing plural wavelengths;
an illuminating unit having an objective lens to illuminate the patterned-waferspecimen through the objective lens with wavelength light, where the light is focused substantially on a pupil of the objective lens and having a predetermined wavelength range as selected from the light emitted from the light source for substantially preventing interference of lights reflected from the waferspecimen by the illuminating;

a detecting unit to detect an image of the patterned-waferspecimen as illuminated by the illuminating unit through the objective lens, with a time-delay integration sensor; and

a processing unit to process an output signal from the time-delay integration sensor and to obtain information relating to a defect of the patterned-waferspecimen.

MAEDA et al., SN 10/686,584
Amtd. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 7

59. (Currently Amended) An apparatus according to the Claim 58, wherein the light source emits ultra violet light, and the illuminating unit selects the ultra violet light from the light emitted from the light source, to illuminate the patterned waferspecimen.

60. (Currently Amended) An apparatus according to the Claim 58, wherein the illuminating unit includes a wavelength selection filter to select light components having a predetermined wavelength range of 600 nm or under from the light emitted from the light source, to illuminate the patterned waferspecimen.

61. (Currently Amended) An apparatus according to the Claim 58, wherein the processing unit processes the signal outputted from the detecting unit with a variable defect detection sensitivity which varies according to a position on the patterned waferspecimen.

62. (Previously Presented) An apparatus according to the Claim 58, wherein the processing unit processes the signal outputted from the detecting unit with a variable defect detection sensitivity which varies according to the pattern being inspected.

63. (Previously Presented) A method according to Claim 47, wherein a wavelength selection filter for selecting wavelengths from the light is disposed between the light source and the objective lens.

MAEDA et al., SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 8

64. (Previously Presented) A method according to Claim 47, wherein a wavelength selection filter for selecting the wavelength light is disposed between the light source and the objective lens.

65. (Previously Presented) An apparatus according to Claim 52, comprising a wavelength selection filter disposed between the light source and the objective lens selects the predetermined light components.

66. (Previously Presented) An apparatus according to Claim 58, comprising a wavelength selection filter disposed between the light source and the objective lens selects the wavelength light.

67. (Currently Amended) An apparatus for inspecting a patterned waferspecimen, comprising:

a light source to emit light containing a plurality of wavelengths;
a non-interference light selector including a filter to select predetermined wavelengths from the light emitted from the light source for substantially preventing interference of lights reflected from the waferspecimen, to illuminate the patterned waferspecimen;

an optical unit having plural lenses to form an optical path of the light emitted from the light source, including an objective lens to pass the light having predetermined wavelengths from the non-interference light selector to the patterned waferspecimen;

MAEDA et al., SN 10/686,584
Amdt. filed 15 September 2005
Responsive to 13 September 2005 Exr. Interview

501.33745CX4 / 219400807US5
Page 9

a detecting unit to detect an image of a pattern on the patterned waferspecimen as illuminated by the predetermined wavelengths and reflected back through the objective lens, and to output a signal concerning a detected image; and

a processing unit to process the signal outputted from the detecting unit and to obtain information of defects of the pattern;

wherein the optical unit focuses the light substantially on a pupil of the objective lens and illuminates the patterned waferspecimen through the objective lens.